

Hi
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a wiring formed on said interlayer insulating film and electrically connected to said thin film transistor through said first contact hole formed in said interlayer insulating film;

a leveling film comprising an organic resin to provide a leveled upper surface over said thin film transistor;

a second contact hole through said leveling film and said interlayer insulating film; and

a pixel electrode formed over said leveled upper surface and directly connected to said semiconductor film of said thin film transistor through said second contact hole,

wherein an edge of said leveling film at a periphery of said second contact hole is rounded,

wherein a surface of said pixel electrode is rounded along the rounded edge of said leveling film.

Ha
13. (Amended) A display device comprising:

a substrate having an insulating surface;

at least one thin film transistor formed on said insulating surface, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof;

an interlayer insulating film over said thin film transistor, said interlayer insulating film comprising an inorganic material;

a leveling film comprising an organic resin formed over said interlayer insulating film and said thin film transistor; and

a pixel electrode formed over said leveling film and directly connected to said semiconductor film of said thin film transistor through an opening provided in said leveling film,

wherein an edge of said leveling film at a periphery of said opening is rounded,

wherein a surface of said pixel electrode is rounded along the rounded edge of said leveling film.

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19. (Amended) A display device comprising:

- a plurality of thin film transistors formed on an insulating surface, each of said thin film transistors comprising at least a semiconductor film;
- an interlayer insulating film formed on the thin film transistors, said interlayer insulating film comprising an inorganic material;
- first openings formed in the interlayer insulating film on the respective transistors;
- a leveling layer formed over said interlayer insulating film to provide a leveled upper surface, wherein said leveling layer comprises an organic resin and is prevented from directly contacting said semiconductor film by said interlayer insulating film;
- second openings through said leveling layer and said interlayer insulating film over the respective transistors; and
- pixel electrodes formed over said leveled upper surface, each of said pixel electrodes being directly connected to said semiconductor film of the corresponding transistors through the corresponding second openings,

wherein an edge of said leveling layer at a periphery of each of said second openings is rounded,

wherein a surface of each of said pixel electrodes is rounded along the rounded edge of said leveling layer.

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25. (Amended) A display device comprising:

- a substrate having an insulating surface;
- at least one thin film transistor formed on said insulating surface, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof;
- an interlayer insulating film comprising an inorganic material formed on said thin film transistor;
- a first contact hole in said interlayer insulating film;
- a wiring formed on said interlayer insulating film and electrically connected to said thin film transistor through said first contact hole formed in said interlayer insulating film;

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a leveling film comprising an organic resin to provide a leveled upper surface over said thin film transistor;

a second contact hole through said leveling film and said interlayer insulating film; and

a pixel electrode formed over said leveled upper surface and directly contacting said semiconductor film of said thin film transistor through said second contact hole,

wherein each of said first and second contact holes is tapered,

wherein an edge of said leveling film at a periphery of said second contact hole is rounded,

wherein a surface of said pixel electrode is rounded along the rounded edge of said leveling film.

H5
56. (Amended) A display device comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film comprising an inorganic material formed over said gate electrode;

a first contact hole in said insulating film;

a wiring formed on said insulating film and electrically connected to said semiconductor film through said first contact hole formed in said insulating film;

a leveling film comprising an organic resin to provide a leveled upper surface over said insulating film;

a second contact hole through said leveling film and said insulating film;
and

a pixel electrode formed over said leveled upper surface and directly connected to said semiconductor film through said second contact hole,

wherein an edge of said leveling film at a periphery of said second contact hole is rounded,

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wherein a surface of said pixel electrode is rounded along the rounded edge of said leveling film.

H6

58. (Amended) A display device comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film over said gate electrode, said insulating film comprising an inorganic material;

a leveling film comprising an organic resin formed over said insulating film;
and

a pixel electrode formed over said leveling film and directly connected to said semiconductor film through an opening provided in said leveling film,

wherein an edge of said leveling film at a periphery of said opening is rounded,

wherein a surface of said pixel electrode is rounded along the rounded edge of said leveling film.

59. (Amended) A display device comprising:

a plurality of thin film transistors formed over a substrate, each of said thin film transistors comprising at least a semiconductor film and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film formed over said gate electrode, said insulating film comprising an inorganic material;

a first opening formed in said insulating film over said semiconductor film;

a leveling layer formed over said insulating film to provide a leveled upper surface, wherein said leveling layer comprises an organic resin and is prevented from directly contacting said semiconductor film by said insulating film;

a second opening through said leveling layer and said insulating film over said semiconductor film; and

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a pixel electrode formed over said leveled upper surface, said pixel electrode being directly connected to said semiconductor film through said second opening,

wherein said second opening is tapered,

wherein an edge of said leveling layer at a peripheral portion of said second opening is rounded,

wherein a surface of said pixel electrode is rounded along the rounded edge of said leveling layer.

60. (Amended) A display device comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film comprising an inorganic material formed over said gate electrode;

a first contact hole formed in said insulating film;

a wiring formed on said insulating film and electrically connected to said semiconductor film through said first contact hole formed in said insulating film;

a leveling film comprising an organic resin to provide a leveled upper surface over said insulating film;

a second contact hole through said leveling film and said insulating film;

and

a pixel electrode formed over said leveled upper surface and directly contacting said semiconductor film through said second contact hole,

wherein each of said first and second contact holes is tapered,

wherein an edge of said leveling film at a periphery of said second contact hole is rounded,

wherein a surface of said pixel electrode is rounded along the rounded edge of said leveling film.

61. (Amended) A television having a display unit and a tuner for receiving television radio wave, said display unit comprising:

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at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film comprising an inorganic material formed over said gate electrode;

a first contact hole in said insulating film;

a wiring formed on said insulating film and electrically connected to said semiconductor film through said first contact hole formed in said insulating film;

a leveling film comprising an organic resin to provide a leveled upper surface over said gate electrode;

a second contact hole through said leveling film and said insulating film;

and

a pixel electrode formed over said leveled upper surface and directly connected to said semiconductor film through said second contact hole,

wherein an edge of said leveling film at a periphery of said second contact hole is rounded,

wherein a surface of said pixel electrode is rounded along the rounded edge of said leveling film.

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63. (Amended) A television having a display unit and a tuner for receiving television radio wave, said display unit comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film over said gate electrode, said insulating film comprising an inorganic material;

a leveling film comprising an organic resin formed over said insulating film;
and

a pixel electrode formed over said leveling film and directly connected to
said semiconductor film through an opening provided in said leveling film,

wherein an edge of said organic resin film at a periphery of said opening is
rounded,

wherein a surface of said pixel electrode is rounded along the rounded
edge of said leveling film.

64. (Amended) A television having a display unit and a tuner for receiving
television radio wave, said display unit comprising:

a plurality of thin film transistors formed over a substrate, each of said thin
film transistors comprising at least a semiconductor film and a gate electrode adjacent
to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film formed over said gate electrode, said insulating film
comprising an inorganic material;

a first opening formed in said insulating film over said semiconductor film;

a leveling layer formed over said insulating film to provide a leveled upper
surface, wherein said leveling layer comprises an organic resin and is prevented from
directly contacting said semiconductor film by said insulating film;

a second opening through said leveling layer and said insulating film over
said semiconductor film; and

a pixel electrode formed over said leveled upper surface, said pixel
electrode being directly connected to said semiconductor film through said second
opening,

wherein said first opening is tapered,

wherein an edge of said leveling layer at a periphery of said second
opening is rounded,

wherein a surface of said pixel electrode is rounded along the rounded
edge of said leveling layer.

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65. (Amended) A television having a display unit and a tuner for receiving television radio wave, said display unit comprising:

at least one thin film transistor formed over a substrate, said thin film transistor having a semiconductor film comprising silicon as an active layer thereof and a gate electrode adjacent to said semiconductor film with a gate insulating film interposed therebetween;

an insulating film comprising an inorganic material formed over said gate electrode;

a first contact hole formed in said insulating film;

a wiring formed on said insulating film and electrically connected to said semiconductor film through said first contact hole formed in said insulating film;

a leveling film comprising an organic resin to provide a leveled upper surface over said gate electrode;

a second contact hole through said leveling film and said insulating film;

and

a pixel electrode formed over said leveled upper surface and directly contacting said semiconductor film through said second contact hole,

wherein each of said first and second contact holes is tapered,

wherein an edge of said leveling film at a periphery of said second contact hole is rounded,

wherein a surface of said pixel electrode is rounded along the rounded edge of said leveling film.
